



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2006-25970; Directorate Identifier 99-NE-12-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; Turbomeca S.A. Turboshift Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to supersede airworthiness directive (AD) 2006-23-17, which applies to certain Turbomeca S.A. Turmo IV A and IV C turboshaft engines. AD 2006-23-17 currently requires repetitive inspections of the centrifugal compressor intake wheel (inducer) blades for cracks and corrosion, replacement of parts that fail inspection, and replacement of the TU 197 standard centrifugal compressor. This proposed AD would require the same inspections but at revised intervals, add the replacement of the TU 215 standard centrifugal compressor, and require replacement of parts that fail inspection. We are proposing this AD to prevent failure of the centrifugal compressor inducer, which could lead to an uncontained blade release, damage to the engine, and damage to the airplane.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Turbomeca S.A., 40220 Tarnos, France; phone: 33 (0)5 59 74 40 00; fax: 33 (0)5 59 74 45 15. You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2006-25970; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Wego Wang, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7134; fax: 781-238-7199; email: [wego.wang@faa.gov](mailto:wego.wang@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this NPRM. Send your comments to an address listed under the ADDRESSES section.

Include “Docket No. FAA-2006-25970; Directorate Identifier 99-NE-12-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. We will consider all comments received by the closing date and may amend this NPRM because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this NPRM.

### **Discussion**

On November 7, 2006, we issued AD 2006-23-17, Amendment 39-14829 (71 FR 66664, November 16, 2006), (“AD 2006-23-17”), for all Turbomeca S.A. Turmo IV A and IV C turboshaft engines. AD 2006-23-17 resulted from a Turbomeca S.A. review of the engine service experience and their determination that more frequent borescope inspections (BSIs) are required on engines not modified to the TU 191, TU 197, or TU 224 standard. AD 2006-23-17 requires repetitive BSI and eddy current inspections (ECIs) or ultrasonic inspections (UIs) of centrifugal compressor intake wheel (inducer) blades and replacement of parts that fail inspection and replacement of the TU 197 standard centrifugal compressor. We issued AD 2006-23-17 to prevent centrifugal compressor intake wheel (inducer) blade cracks, which can result in engine in-flight power loss, engine shutdown, or forced landing.

### **Actions Since AD 2006-23-17 Was Issued**

Since we issued AD 2006-23-17, a centrifugal compressor inducer blade loss occurred on an engine modified to TU 224 standard. This blade loss was due to cracks caused by impacts combined with significant erosion of the part not related to the TU 224 modification. Turbomeca S.A. has revised the inspection intervals for the centrifugal

compressor (inducer) blades, and requires replacement of parts that fail inspection, and replacement of the TU 197 and TU 215 standard centrifugal compressors. This proposed AD would require repetitive BSIs, and ECIs or UIs of the centrifugal compressor inducers at revised intervals, replacement of parts that fail inspection, and replacement of the TU 197 and TU 215 standard centrifugal compressors.

#### **Related Service Information under 1 CFR Part 51**

We reviewed Turbomeca S.A. Alert Mandatory Service Bulletin (MSB) No. A249-72-0100 Version H, dated May 21, 2015. The MSB describes procedures for the inspection and replacement of the centrifugal compressor inducer blades. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section of this NPRM.

#### **FAA's Determination**

We are proposing this NPRM because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

#### **Proposed AD Requirements**

This NPRM would require repetitive BSIs, and ECIs or UIs based on the in-service requirements established for the various centrifugal compressor inducer standards, replacement of parts that fail inspection, and replacement of the TU 197 and TU 215 standard centrifugal compressors.

#### **Costs of Compliance**

We estimate that this proposed AD affects 36 engines installed on airplanes of U.S. registry. We estimate that two of these engines will require compressor replacement. We also estimate that about 40 hours per engine are required to comply with this proposed AD. The average labor rate is \$85 per hour. Parts cost about \$40,000 per

engine. Based on these figures, we estimate the cost of this proposed AD on U.S. operators to be \$202,400.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We have determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by removing airworthiness directive (AD) 2006-23-17, Amendment 39-14829 (71 FR 66664, November 16, 2006) (“2006-23-17”), and adding the following new AD:

**Turbomeca S.A.:** Docket No. FAA-2006-25970; Directorate Identifier 99-NE-12-AD.

#### **(a) Comments Due Date**

The FAA must receive comments on this AD action by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

This AD replaces AD 2006-23-17.

#### **(c) Applicability**

This AD applies to Turbomeca S.A. Turmo IV A and IV C turboshaft engines.

#### **(d) Unsafe Condition**

This AD was prompted by a centrifugal compressor inducer blade loss. We are issuing this AD to prevent failure of the centrifugal compressor inducer, which could lead to an uncontained blade release, damage to the engine, and damage to the airplane.

**(e) Compliance**

Comply with this AD within the compliance times specified, unless already done.

(1) Remove the TU 197 and TU 215 standard centrifugal compressors and install the TU 224 standard centrifugal compressor, within 30 days after the effective date of this AD.

(2) Perform initial and repetitive ultrasonic inspections (UIs) or eddy current inspections (ECIs) of the centrifugal compressor (inducer). Use Accomplishment Instructions, paragraph 6.B.(1)(b) of Turbomeca S.A. Alert Mandatory Service Bulletin (MSB) No. A249 72 0100 Version H, dated May 21, 2015 to do the inspections. Use Appendix 1 of Turbomeca S.A. Alert MSB No. A249 72 0100 Version H, dated May 21, 2015 for the schedule of inspections.

(3) Perform initial and repetitive borescope inspections (BSIs) of the centrifugal compressor inducer. Use Accomplishment Instructions, paragraphs 6.B.(1)(a) of Turbomeca S.A. Alert MSB No. A249 72 0100 Version H, dated May 21, 2015 to do the inspections. Use Appendix 1 of Turbomeca S.A. Alert MSB No. A249 72 0100 Version H, dated May 21, 2015 for the schedule of inspections.

(4) If, during any inspection required by paragraphs (e)(2) or (e)(3) of this AD, any crack, corrosion, or other damage is detected on the inducer, then before next flight, replace the centrifugal compressor.

(5) Accomplishment of a UI or ECI of the centrifugal compressor inducer, required by paragraph (e)(2) of this AD, is acceptable in lieu of a BSI required by paragraph (e)(3) of this AD for that engine.

(6) Replacement of a centrifugal compressor required by paragraph (e)(4) of this AD, does not constitute terminating action for the repetitive inspections required by paragraphs (e)(2) and (e)(3) of this AD.

**(f) Credit for Previous Actions**

You may take credit for the inspections and corrective actions required by paragraph (e)(2) and (e)(3) of this AD if you performed the inspections and corrective actions before the effective date of this AD, using Turbomeca S.A. Alert MSB No. A249 72 0100, Version G, or an earlier version.

**(g) Alternative Methods of Compliance (AMOCs)**

The Manager, Engine Certification Office, FAA, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request. You may email your request to: ANE-AD-AMOC@faa.gov.

**(h) Related Information**

(1) For more information about this AD, contact Wego Wang, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7134; fax: 781-238-7199; email: wego.wang@faa.gov.

(2) For service information identified in this AD, contact Turbomeca S.A., 40220 Tarnos, France; phone: 33 (0)5 59 74 40 00; fax: 33 (0)5 59 74 45 15.

(3) You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

Issued in Burlington, Massachusetts, on November 18, 2015.

Colleen M. D'Alessandro,  
Directorate Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.  
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